

Listing of Claims:

Claims 1-20 (Canceled).

21. (Currently Amended) A defect inspection system comprising:

an image acquiring section for acquiring a two-dimensional image of an entire surface of each of a plurality of subjects
5 ~~subject which is a processing target in a manufacturing process;~~

an image storing section for storing, as image data, the two-dimensional image of the entire surface of ~~the~~ said each subject acquired by said image acquiring section;

a defect extracting section for extracting ~~as~~ defect data
10 ~~, a defect~~ of the surface of ~~the~~ said each subject based on a defect extraction algorithm using a predetermined parameter for the two-dimensional image read out from said image storing section, so as to extract a defect if the defect is determined to be present based on the defect extraction algorithm;

15 a displaying section for displaying an image of ~~the~~ each defect ~~of the subject~~ extracted by said defect extracting section, ~~as a defect~~ by superimposing the image of the defect on the two-dimensional image of the a subject which is determined to have the defect;

20 a parameter adjusting section for adjusting the parameter to
set a new parameter to change a defect extraction degree for the
~~defect image of the said each subject displayed by said~~
~~displaying section; and~~

a quality judging section for judging whether ~~the~~ said each
25 subject is ~~good or bad~~ acceptable, by checking the defect data
extracted by said defect extracting section with reference to
defect data registered in advance in a defect dictionary,

wherein when the parameter is adjusted by the parameter
adjusting section:

30 said displaying section displays two kinds of two-
dimensional images including at least one said two-dimensional
image acquired by the image acquiring section when inspection is
performed and a two-dimensional image of a subject which has been
registered in advance as defective;

35 said defect extracting section extracts ~~, as~~ updated
defect data ~~, a defect of the subject~~ based on ~~a~~ the defect
extraction algorithm using ~~a~~ the new parameter adjusted by the
parameter adjusting section for the two kinds of two-dimensional
images; and

40 said display section displays each updated defect which
is determined to exist based on the updated defect data extracted
by said defect extracting section, by superimposing an image of
the updated defect on corresponding images of the two kinds of

two-dimensional images displayed by said displaying section.

45 ~~adjusted by said parameter adjusting section, and updates the~~
~~defect image displayed by said displaying section.~~

22. (Currently Amended) The defect inspection system
according to claim 21, wherein said displaying section has a
function of reducing sizes of ~~defect~~ two-dimensional images of ~~a~~
the plurality of subjects subjected to defect extracting
5 processing ~~of~~ by said defect extracting section, and of
displaying the ~~defect~~ two-dimensional images ~~in a list~~, and a
function of displaying results of judgment by said quality
judging section ~~, with~~ using at least one of color ~~or~~ and
characters, with respect to the ~~defect~~ two-dimensional images of
10 the plurality of subjects.

23. (Currently Amended) The defect inspection system
according to claim 21, wherein said displaying section has a
function of displaying ~~, in a list,~~ thumbnail images obtained by
reducing sizes of ~~defect~~ two-dimensional images of ~~a~~ the
5 plurality of subjects subjected to defect extraction processing
~~of~~ by said defect extracting section, a function of ~~enlargedly~~
enlarging and displaying a specified one of the thumbnail images,
and a function of specifying a defect portion on said specified
one of the thumbnail images ~~which is enlargedly displayed,~~ to

10 thereby display ~~the~~ a kind of a defect which corresponds to the defect portion.

24. (Currently Amended) The defect inspection system according to claim 21, wherein said displaying section has a function of reducing sizes of ~~defect images~~ two-dimensional images of ~~a~~ the plurality of subjects subjected to defect
5 extraction processing ~~of~~ by said defect extracting section, and of displaying the ~~defect~~ two-dimensional images of the plurality of subjects ~~in a list~~ such that the ~~defect~~ two-dimensional images of the plurality of subjects are discriminated from each other with respect to whether ~~each of the defect images is that of the~~
10 ~~subject judged to be good or bad by~~ said quality judging section has judged a subject corresponding to the two-dimensional image to be acceptable.

25. (Currently Amended) The defect inspection system according to claim 21, wherein said displaying section displays ~~an~~ the image of ~~a~~ the updated defect extracted ~~in parameter~~ in accordance with the new parameter ~~adjusted by said parameter~~
5 ~~adjusting section,~~ with a color of the image of the updated defect changed in accordance with an extraction degree corresponding to the new parameter.

26. (Currently Amended) The defect inspection system according to claim 21, wherein said displaying section changes a color of the image of the updated defect ~~which is to be displayed~~, in accordance with a change history of the parameter adjusted by said parameter adjusting section.

27. (Currently Amended) The defect inspection system according to claim 21, wherein said displaying section has a function of displaying a re-displaying button for changing the new parameter adjusted by said parameter adjusting section back to a former parameter, and a function of re-displaying the ~~defect~~ two-dimensional image of said each subject ~~extracted~~ based on the former parameter, when the re-displaying button is clicked.

28. (Currently Amended) ~~The~~ A defect inspection system ~~according to claim 27,~~ comprising:

an image acquiring section for acquiring a two-dimensional image of an entire surface of a subject which is a processing target in a manufacturing process;

an image storing section for storing, as image data, the two-dimensional image of the entire surface of the subject acquired by said image acquiring section;

a defect extracting section for extracting, as defect data, a defect of the surface of the subject based on a defect

extraction algorithm using a predetermined parameter for the two-dimensional image read out from said image storing section;

a displaying section for displaying an image of the defect of the subject extracted by said defect extracting section, as a defect image of the subject;

a parameter adjusting section for adjusting the parameter to change a defect extraction degree for the defect image of the subject displayed by said displaying section; and

a quality judging section for judging whether the subject is good or bad, by checking defect data extracted by said defect extracting section with reference to defect data registered in advance in a defect dictionary;

wherein said defect extracting section extracts, as defect data, a defect of the subject based on a defect extraction algorithm using a new parameter adjusted by said parameter adjusting section, and updates the defect image displayed by said displaying section;

wherein said displaying section has a function of displaying a re-displaying button for changing the parameter adjusted by said parameter adjusting section back to a former parameter, and a function of re-displaying the defect image extracted based on the former parameter, when the re-displaying button is clicked; and

wherein said displaying section has a function of comparing images respectively obtained based on the parameter adjusted by

35 said parameter adjusting section and the former parameter, and of
displaying a determination button for determining one of the
parameters as an optimal parameter.

29. (Currently Amended) The defect inspection system
according to claim 21, wherein said quality judging section has a
function of determining ~~the~~ a kind of the defect by checking the
defect data extracted by said defect extracting section with
5 reference to the defect data registered in advance in the defect
dictionary, and a function of registering new defect data in the
defect dictionary.

30. (Currently Amended) The defect inspection system
according to claim 21, wherein said defect extracting section
produces a recipe for determining the defect extraction degree,
which serves as a reference for judging whether the subject is
5 ~~good or bad~~ acceptable.

31. (Currently Amended) The defect inspection system
according to claim 21, wherein ~~in said defect extracting section,~~
a parameter for selecting a subject recognized in advance to be
good is automatically set in said defect extracting section.

5 32. (Currently Amended) The defect inspection system
according to claim 21, wherein said parameter adjusting section

is ~~allowed~~ adapted to set upper and lower limit values of the
~~predetermined~~ parameter as threshold values for defect
extraction. ~~, said defect extracting section extracts, as the~~
10. ~~defect data, the defect of the subject based on the defect~~
~~extraction algorithm using the new parameter adjusted by said~~
~~parameter adjusting section, and said displaying section displays~~
~~the defect image extracted by said defect extracting section,~~
~~after updating the defect image.~~

33. (Currently Amended) The defect inspection system
according to claim 32, wherein said displaying section displays
~~the defect~~ two-dimensional images of the plurality of subjects
~~extracted by said defect extracting section such that as~~
5 ~~thumbnail images. of the defect images are displayed in a list,~~
~~and said defect extracting section extracts a defect as defect~~
~~data based on the new parameter adjusted by said parameter~~
~~adjusting section, and updates the thumbnail images.~~

34. (Currently Amended) The defect image inspection system
according to claim 32, wherein said defect extracting section
extracts, from ~~at least one of one or more image~~ data exceeding
the lower limit value, ~~as the defect data, said at least one of~~
5 ~~one or more image~~ data exceeding the upper limit value as the
defect data.

35. (Currently Amended) ~~The~~ A defect image inspection system ~~according to claim 32,~~ comprising:

an image acquiring section for acquiring a two-dimensional image of an entire surface of a subject which is a processing target in a manufacturing process;

an image storing section for storing, as image data, the two-dimensional image of the entire surface of the subject acquired by said image acquiring section;

a defect extracting section for extracting, as defect data, a defect of the surface of the subject based on a defect extraction algorithm using a predetermined parameter for the two-dimensional image read out from said image storing section;

a displaying section for displaying an image of the defect of the subject extracted by said defect extracting section, as a defect image of the subject;

a parameter adjusting section for adjusting the parameter to change a defect extraction degree for the defect image of the subject displayed by said displaying section; and

a quality judging section for judging whether the subject is acceptable, by checking defect data extracted by said defect extracting section with reference to defect data registered in advance in a defect dictionary;

wherein said defect extracting section extracts, as defect data, a defect of the subject based on a defect extraction algorithm using a new parameter adjusted by said parameter adjusting section, and updates the defect image displayed by said displaying section;

wherein said parameter adjusting section is adapted to set upper and lower limit values of the predetermined parameter as threshold values for defect extraction, said defect extracting section extracts, as the defect data, the defect of the subject based on the defect extraction algorithm using the new parameter adjusted by said parameter adjusting section, and said displaying section displays the defect image extracted by said defect extracting section, after updating the defect image; and

wherein said displaying section displays a slide switch for setting the upper and lower limit values in an area other than a defect image displaying area on a screen.

36. (Currently Amended) The defect image inspection system according to claim 21, wherein said defect extracting section prepares a plurality of respective groups of parameters for kinds of defects, kinds of inspection conditions, kinds of inspection methods and kinds of extraction methods, ~~respectively,~~ and said parameter adjusting section adjusts the parameters of each of the groups.